

NEW RECORDS OF THE WATER MITE FAMILY HYDRYPHANTIDAE FROM AUSTRALIA, WITH THE DESCRIPTION OF THREE NEW SPECIES (ACARI: ACTINEDIDA)

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ABSTRACT

Two new species of the water mite genus *Pseudohydrphantès*, *P. gracilipalpis* sp. nov. and *P. elongatus* sp. nov., and one new species of the genus *Cyclohydrphantès*, *C. occidentalis* sp. nov., are described from Northern Territory and Western Australia. New records are presented from already known species of the genera *Hydrphantès*, *Pseudohydrphantès* and *Diplodontus* from Northern Territory and Western Australia.

KEYWORDS: Water mites, new species, Northern Territory, Western Australia, Australia

INTRODUCTION

The water mite family Hydrphantidae is represented in Australia by nine genera (the number of species in brackets): *Hydrphantès* Koch (2), *Notopanisus* Besch (1), *Austrotrombella* Southcott (1), *Wandesia* Schechtel (2), *Tartarothyas* Viets (1), *Pseudohydrphantès* Viets (11), *Cyclohydrphantès* Lundblad (2), *Diplodontus* Dugès (2) and *Mauersa* Koenike (1) (Lundblad 1947; Cook 1986; Harvey 1987, 1988a, 1988b, 1996). From Northern Territory only four species are known of the genera *Mauersa* and *Pseudohydrphantès*, and one species of the genus *Hydrphantès* has been reported from Western Australia.

In this study two new *Pseudohydrphantès* species are described from Northern Territory, and one new *Cyclohydrphantès* species from Western Australia. New records are presented of already known species from Northern Territory and Western Australia.

MATERIAL AND METHODS

All material has been collected by the author. Western Australian and Northern Territory holotypes and paratypes have been deposited in the Western Australian Museum (Perth) (WAM), and in the Museum and Art Gallery of the Northern Territory (Darwin) (NTM) respectively. Paratypes and all non-type material have been deposited in the

Zoological Museum of the University of Amsterdam (ZMA). Measurements are in µm, measurements of palp and leg segments are of dorsal margins. Measurements of paratypes are given in brackets. The following abbreviations have been used: PI-PV, palp segments 1-5; I-leg-5, fifth segment of first leg. For terminology of glandularia see Harvey (1988b).

SYSTEMATICS

Hydrphantès Koch, 1841

Hydrphantès Koch, 1841: 18.

Two species and one subspecies of this genus are known from Australia, both from the subgenus *Polyhydrphantès*. The genus has been recorded from Victoria, New South Wales, Queensland and Western Australia (Lundblad 1947; Cook 1986)

Hydrphantès (Polyhydrphantès) haliki Cook, 1986

Hydrphantès (Polyhydrphantès) haliki
Cook, 1986: 13.

Hydrphantès (Polyhydrphantès) haliki -
Smit 1992: 92.

Material examined. WESTERN AUSTRALIA. ZMA, 3 ♀♀, pond at Dales Gorge, Hamersley Range National Park, 12 August 1994.

Remarks. The species has been reported from New South Wales and Queensland, so the record from Western Australia means a considerable range extension of the species.

Pseudohdryphantes Viets, 1907

Pseudohdryphantes Viets, 1907: 130.

Fourteen species of *Pseudohdryphantes* have been described so far, of which eleven are known from Australia and New Zealand. With the two new species described in this paper, more than 80 % of the known species are from Australia and New Zealand.

Pseudohdryphantes wangai
Harvey, 1988

Pseudohdryphantes wangai Harvey, 1988b: 21.

Material examined. NORTHERN TERRITORY. ZMA, 4 ♂♂, 25 ♀♀, pond at Jim Jim Creek, near Jim Jim campground, Kakadu National Park, 23 July 1994; 7 ♀♀, pool at Twin Falls, Kakadu National Park, 23 July 1994; 2 ♀♀, pool near Jim Jim Falls, Kakadu National Park, 23 July 1994; 2 ♀♀, plunge pool at Barramundie Creek, Kakadu National Park, 24 July 1994; 5 ♂♂, 20 ♀♀, plunge pool at Gunlom Falls, Kakadu National Park, 25 July 1994; 1 ♂, Lily Ponds Falls, Katherine Gorge National Park, 27 July 1994; 1 ♂, 10 ♀♀, plunge pool at Edith Falls, Katherine Gorge National Park, 30 July 1994.

WESTERN AUSTRALIA. ZMA, 1 ♀, pond at Dales Gorge, Hamersley Range National Park, 12 August 1994; 1 ♂, pond at Kalamina Gorge, near falls, Hamersley Range National Park, 13 August 1994; 1 ♂, Python Pool, Millstream-Chichester National Park, 17 August 1994.

Remarks. The species has previously only been reported from Northern Territory. The new records from Western Australia mean a considerable range extension of the species.

According to Harvey (1988b), the PIV has a small, thickened seta on the medial side. However, in the majority of specimens from this study, this seta is lacking in both males and females.

Pseudohdryphantes inataranka
Harvey, 1988

Pseudohdryphantes inataranka Harvey, 1988b: 24.

Material examined. NORTHERN TERRITORY. ZMA, 1 ♂, Baboalba Springs (Gubarra), Kakadu National Park, 20 July 1994; 1 ♂, pool at Twin Falls, Kakadu National Park, 23 July 1994; 1 ♂, 1 ♀, plunge pool at Gunlom Falls, Kakadu National Park, 25 July 1994; 2 ♂♂, Lily Ponds Falls, Katherine Gorge National Park, 27 July 1994; 2 ♂♂, plunge pool at Edith Falls, Katherine Gorge National Park, 30 July 1994.

WESTERN AUSTRALIA. ZMA, 1 ♂, 2 ♀♀, Fortescue Falls (pool), Hamersley Range National Park, 11 August 1994; 1 ♀, Circular Pool, Hamersley Range National Park, 12 August 1994; 1 ♀, pond at Dales Gorge, Hamersley Range National Park, 12 August 1994; 3 ♂♂, 3 ♀♀, pond at Kalamina Gorge, near falls, Hamersley Range National Park, 13 August 1994; 1 ♀, Palm Pool, Millstream-Chichester National Park, 15 August 1994; 1 ♀, Crossing Pool, Millstream-Chichester National Park, 16 August 1994; 1 ♂, 1 ♀, pond at Snake Creek, Millstream-Chichester National Park, 17 August 1994; 2 ♀♀, Python Pool, Millstream-Chichester National Park, 17 August 1996; 1 ♀, Fortescue River at crossing with North West Coastal Highway, 18 August 1994.

Remarks. Previously, the species has only been reported from Northern Territory (Harvey 1988b). The new records from Western Australia mean a considerable range extension of the species.

Pseudohdryphantes gracilipalpis sp. nov.
(Fig. 1A-E)

Type material. HOLOTYPE - NTM I-678, ♂, plunge pool at Edith Falls, Katherine Gorge National Park, Northern Territory, Australia, 30 July 1994. PARATYPES - ZMA, 2 ♀♀; NTM I-681, I-682, 2 ♀♀, same data as holotype.

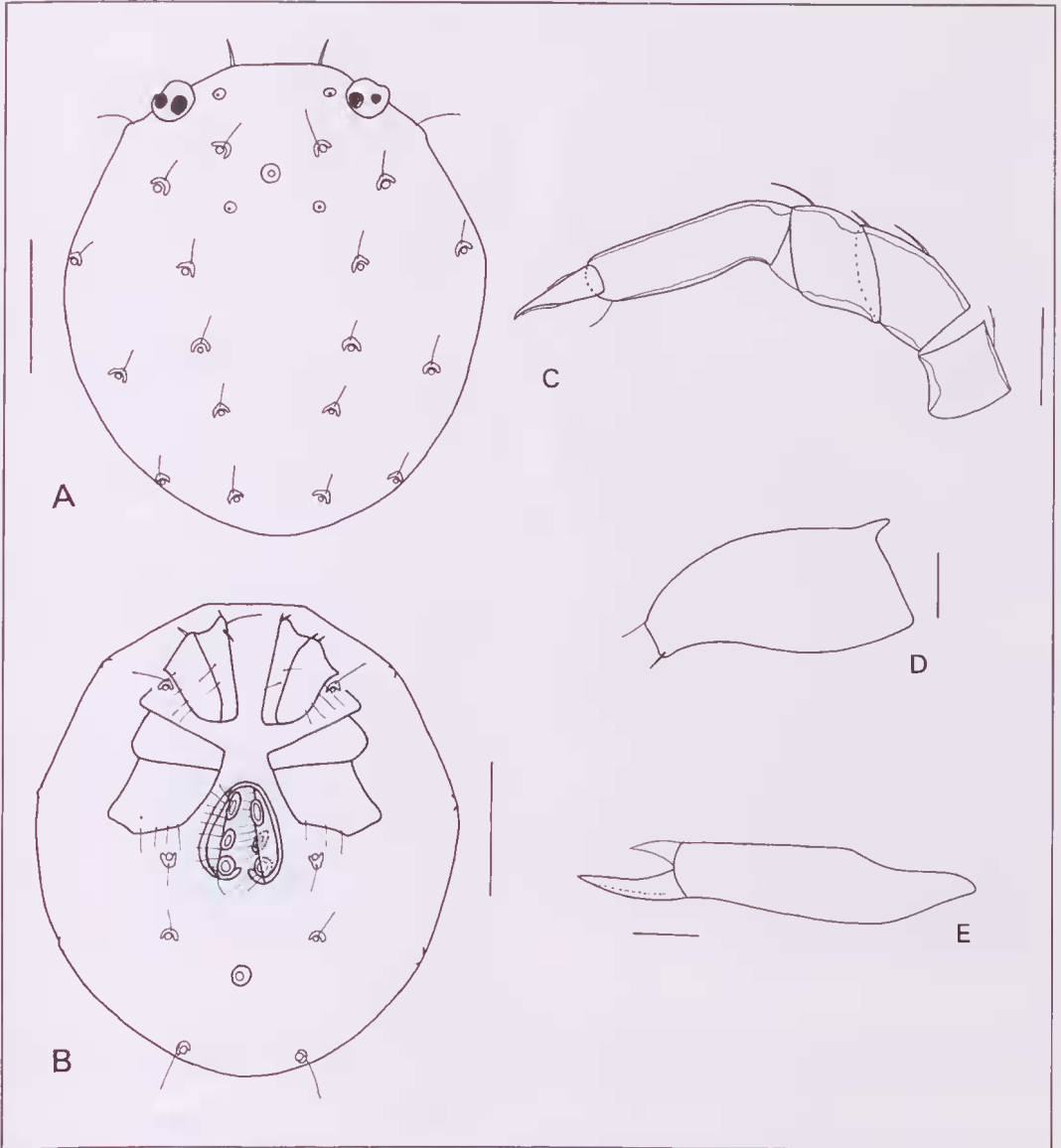


Fig. 1. *Pseudohydryphantes gracilipalpis* sp. nov., holotype ♂: A, dorsal view; B, ventral view; C, palp; D, capitulum; E, chelicere. Scale bars: A and B 200 µm; C-E, 50 µm.

Diagnosis. The PIV lacking an anterodorsal extension and the very slender PV are diagnostic for the new species.

Description. Male. Body 701 long and 621 wide. Integument papillate. Lateral eyes on ocular tubercles. Sclerites associated with glandularia crescent shaped. Median eye on same level as dg3, postocularia posteriorly of dg3 (Fig. 1A). Capitulum without long, downturned anterior extension (Fig. 1D).

Chelicera of normal shape, 250 long; cheliceral claw curved, with 14-15 teeth, cheliceral lamella slightly bowed (Fig. 1E). Genital field 144 long. Three pairs of acetabula, the posterior pair ovoid, the two anterior pairs elongate. Mesial edge of genital flaps with a row of long setae (Fig. 1B). Excretory pore surrounded by sclerotization. Vg3 anterior to excretory pore, vg4 situated laterally. Dorsal lengths of

PI-PV: 38, 70, 37, 108, 49. PIV without anterodorsal extension and without seta on medial side, PV very slender (Fig. 1C). Dorsal lengths of I-leg-4-6: 82, 108, 130; dorsal lengths of IV-leg-4-6: 137, 144, 125. Third and fourth legs with swimming setae: III-leg-3 with one to two, III-leg-4 with seven, III-leg-5 with eight, IV-leg-3 with one to two, IV-leg-4 with four to seven and IV-leg-5 with eight. Claws without serration or teeth.

Female. Body 747-786 long and 621-669 wide. Location of glandularia as in male. Chelicera 245 long, shape as in male. Genital field 185 long, the posterior pair ovoid, the two anterior pairs elongate. Mesial edge of genital flaps with a row of long setae. Excretory pore surrounded by sclerotization. Lengths of PI-PV: 38, 72, 38, 108, 48; palp as in male. Lengths of I-leg-4-6: 91, 113, 128. Lengths of IV-leg-4-6: 142, 152, 130. Third and fourth legs with swimming setae: III-leg-3 with one, III-leg-4 with five, III-leg-6 with six, IV-leg-3 with one, IV-leg-4 with five and IV-leg-5 with six. Claws without serration or teeth.

Remarks. The new species has a very unusual palp. The PIV is lacking an anterodorsal extension, a character not found in any other member of the genus. This character is very rare in the family Hydryphantidae (Cook 1974).

Etymology. Named for its very slender PV.

Pseudohydryphantes elongatus sp. nov.

(Fig. 2A-E)

Type material. HOLOTYPE - NTM 1-679, ♂, pool at Twin Falls, Kakadu National Park, Northern Territory, Australia, 23 July 1994.

Diagnosis. Sclerites associated with glandularia crescent shaped. Dg1, lg1 and lg2 large. Median eye slightly anterior of dg2. Postocularia on same level as dg3, relative far posterior of median eye.

Description. **Male.** Body elongated, 553 long and 364 wide. Integument papillate. Lateral eyes on ocular tubercles. Sclerites associated with glandularia crescent shaped. Crescents relative short and broad. Dg1, lg1

and lg2 large. Median eye slightly anterior to dg2. Postocularia on same level as dg3, relatively distant posterior to median eye (Fig. 2A). First coxae with small, blade-like setae. Capitulum very short, without long, downturned anterior extension (Fig. 2D). Chelicera of normal shape, 245 long; cheliceral claw curved, with approximately 10 teeth, cheliceral lamella almost straight (Fig. 2E). Genital field 151 long. Three pairs of acetabula, the posterior pair ovoid, the two anterior pairs elongate. Mesial edge of genital flaps with a row of long setae (Fig. 2B). Excretory pore surrounded by sclerotization. Lengths of PI-PV: 41, 84, 47, 122, 29; PIV with a small seta on ventral side (Fig. 2C). Lengths of I-leg-4-6: 94, 106, 125. Lengths of IV-leg-4-6: 146, 156, 122. Third and fourth legs with swimming setae: III-leg-3 and IV-leg-3 with one, III-leg-4 with five, III-leg-5 with seven, IV-leg-4 with six and IV-leg-5 with five. Claws without serration or teeth.

Female. Unknown.

Remarks. The new species is close to *P. crassipes* Cook, *P. cooki* Harvey and *P. aroona* Harvey. It differs from these species in the configuration of median eye, postocularia and dg2 and dg3. Moreover, the sclerites of *P. crassipes* are small and not crescent shaped, the excretory pore of *P. cooki* is not completely surrounded by sclerotization, and the pre- and postocularia and median eye of *P. aroona* have much larger sclerotization.

Etymology. Named for the slender body shape.

Cyclohydryphantes Lundblad, 1941

Cyclohydryphantes Lundblad, 1941: 111.

The genus *Cyclohydryphantes* is endemic to Australia. So far, two species have been described, i.e. *C. trabeculiferus* Lundblad, known from Victoria and Tasmania, and *C. mutarnee* Harvey from Queensland.

Cyclohydryphantes occidentalis sp. nov.

(Fig. 3A-F)

Type material. HOLOTYPE - WAM 98/1588, ♀, Circular Pool, Hamersley Range National Park, Western Australia, Australia,

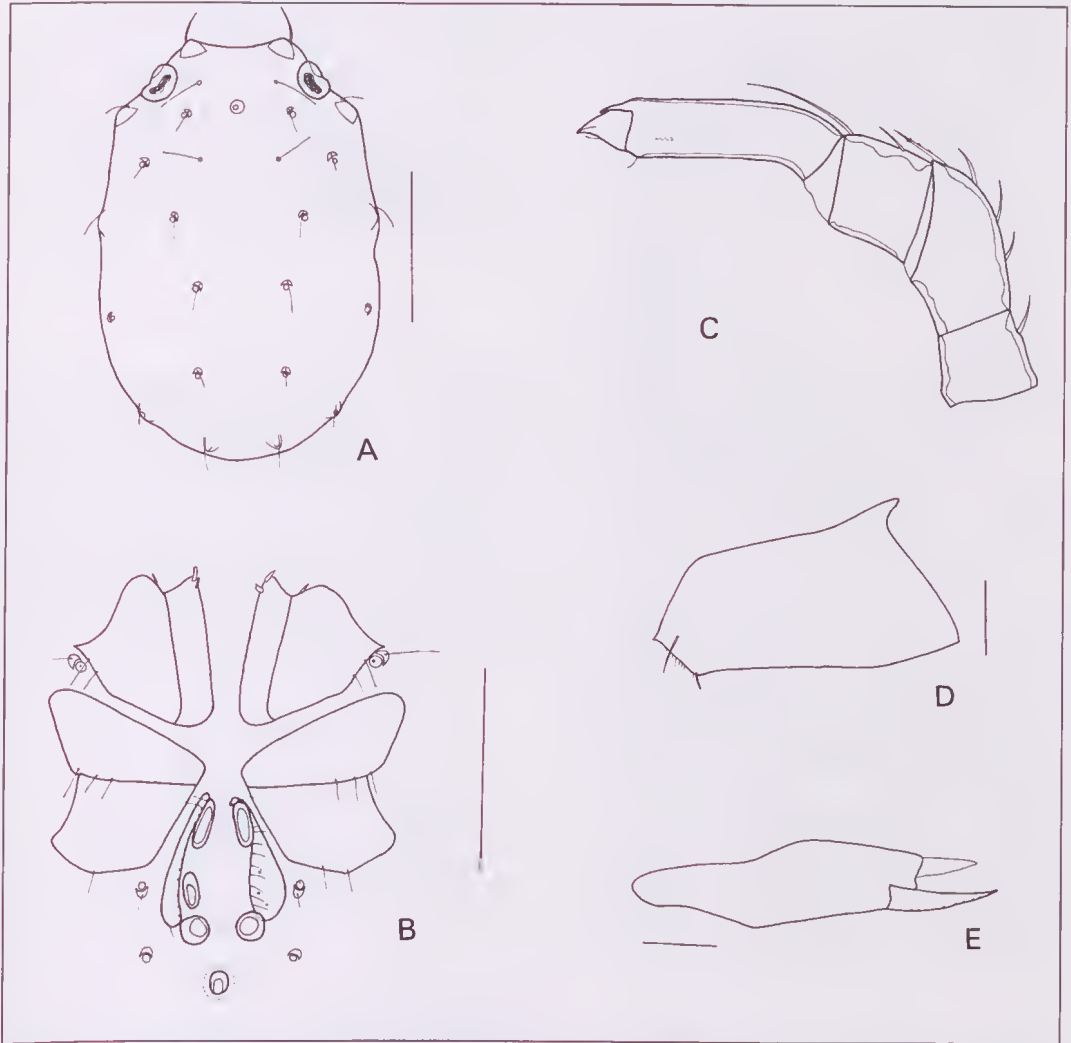


Fig. 2. *Pseudohydryphantes elongatus* sp. nov., holotype ♂: A, dorsal view; B, ventral view; C, palp; D, capitulum; E, chelicere. Scale bars: A and B, 200 µm; C-E, 50 µm.

12 August 1994. PARATYPES - WAM 98/1589, 1 ♀, same data as holotype; ZMA, 2 ♀♀; NTM I-680, 1 ♀, pool at Joffre Gorge, Hamersley Range National Park, 13 August 1994.

Diagnosis. Proocularia rounded, antenniform plate with short branches, Igl elongated, sclerites associated with ventroglandularia crescent shaped.

Description. *Female.* Body 1072 (1128-1176) long and 902 (980-1004) wide. Integument papillate. Lateral eyes on ocular tubercles. Sclerites associated with dg4, dg5, dg6, vg2 and vg2 crescent shaped, vg1 with a ring-shaped sclerite, all other glandularia

on elongate platelets (Fig. 3A). Proocularia rounded, antenniform plate with short branches (Fig. 3C). Genital field 208 long. Genital flaps with a mesial row of long setae. Three pairs of acetabula, the posterior pair rounded, the two anterior pairs elliptical (Fig. 3B). Capitulum short, anteriorly short downturned (Fig. 3E). Chelicera of normal shape, 359 long; cheliceral claw slightly curved, with approximately 12 small teeth, cheliceral lamellae pointed (Fig. 3F). Lengths of PI-PV: 50, 96, 61, 155, 36; PII with two long seta on medial side, PIV with a short seta distally on medial side (Fig. 3D). Lengths of I-leg-4-6: 126, 131, 126; lengths

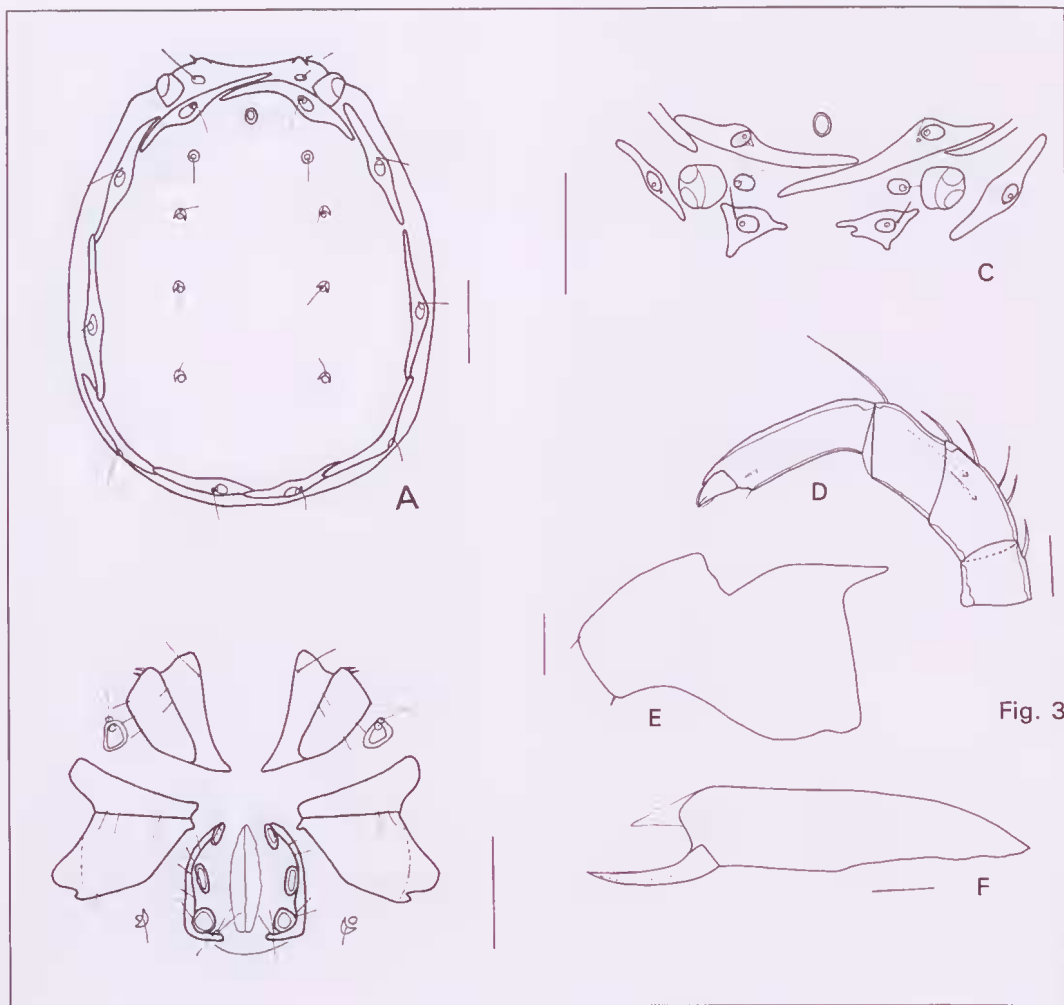


Fig. 3. *Cyclohydriphantes occidentalis* sp. nov., holotype ♂: A, dorsal view; B, ventral view; C, anteromedial view; D, palp; E, capitulum; F, chelicere. Scale bars: A-C, 200 µm; D-F, 50 µm.

of IV-leg-4-6: 213, 233, 126. Third and fourth legs with swimming setae: III-leg-3 with one to two, III-leg-4 with five to six, III-leg-5 with six to seven, IV-leg-3 with one, IV-leg-4 with eight and IV-leg-5 with six to seven. Excretory pore surrounded by sclerotization.

Male: Unknown.

Remarks. The new species is close to *Cyclohydriphantes trabeculiferus* Lundblad, but differs in the shape of preocularia (triangular in *trabeculiferus*), the shape of the antenniform platelet (*C. trabeculiferus* has long branches), the shape of the sclerite of Igl1 (shorter in *C. trabeculiferus*). Furthermore, the sclerites of vg2 and vg3 of *C. trabeculiferus* are

rounded. *Cyclohydriphantes trabeculiferus* (1405-1930 long) is much larger than the new species.

Etymology. The name of the new species refers to its occurrence in Western Australia.

Diplodontus Dugès, 1834

Diplodontus Dugès, 1834: 17.

Diplodontus haliki Lundblad, 1947

Diplodontus haliki Lundblad, 1947: 30.

Diplodontus haliki - Cook 1986: 18; - Smit 1992: 93.

Material examined. *Western Australia.* ZMA, 1♂, western part of Deep Reach Pool, Millstream-Chichester National Park, 16 August 1994.

Remarks. The species has been reported from Victoria, New South Wales and Tasmania. The new record from Western Australia means a considerable range extension of the species.

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